

Targeting Topics: Recent Scientific References

(continued from page 3)

Characteristic patterns of dendritic remodeling in early-stage glaucoma: evidence from genetically identified retinal ganglion cell types.

El-Danaf RN, Huberman AD.

J Neurosci 35(6):2329-2343, 2015.

The loss of retinal ganglion cells (RGC) is the second-most common cause of blindness worldwide. Using several mouse transgenic cell lines, the authors investigated the changes that occur on the establishment of elevated ocular pressure. Anti-melanopsin (Cat. #AB-N39) at 1:1000 was used to illuminate the morphology of the M1 intrinsically photosensitive RGC.

Individual Differences in Acute Pain-induced Endogenous Analgesia Predict Time to Resolution of Postoperative Pain in the Rat.

Peters CM, Hayashida KI, Suto T, Houle TT, Aschenbrenner CA, Martin TJ, Eisenach JC.

Anesthesiology 2015.

The authors investigated the relationship between preoperative Conditioned Pain Modulation (CPM) and the time course of recovery from surgery. CPM was evaluated using forepaw capsaicin injections into rats. During the study, lesioned rats received 5- μ g intrathecal injections of anti-DBH-SAP (Cat. #IT-03), followed 14 days later by a partial L5 spinal nerve ligation surgery. Mouse-IgG-SAP (Cat. #IT-18) was used as a control. CPM was partially blocked in the lesioned animals, suggesting descending noradrenergic signaling is important in the time course of recovery from surgery.

New mouse retinal stroke model reveals direction-selective circuit damage linked to permanent optokinetic response loss.

Joly S, Guzik-Kornacka A, Schwab ME, Pernet V.

Invest Ophthalmol Vis Sci 55(7):4476-4489, 2014.

The authors used a mouse model of 'retinal stroke' to better delineate the optokinetic response deficits at the cellular level. Damage was found in the processes of starburst amacrine cells (SACs), and to a lesser extent, the dendrites. Anti-melanopsin (Cat. #AB-N38) at 1:2500 was used for immunohistochemistry.

Neutral aminoaciduria in cystathionine beta-synthase-deficient mice; an animal model of homocystinuria.

Akahoshi N, Kamata S, Kubota M, Hishiki T, Nagahata Y, Matsuura T, Yamazaki C, Yoshida Y, Yamada H, Ishizaki Y, Suematsu M, Kasahara T, Ishii I.

Am J Physiol Renal Physiol 306(12):F1462-76, 2014.

The authors utilized a mouse model for homocystinuria in order to examine renal amino acid reabsorption. Some of the immunohistochemistry experiments used anti-Met (Cat. #AB-T036). It was found that loss of cystathionine β -synthase causes hyperexcretion of both glucogenic and ketogenic neutral amino acids, as well as histidine.



TRPV1 expression level in isolectin B4-positive neurons contributes to mouse strain difference in cutaneous thermal nociceptive sensitivity.

Ono K, Ye Y, Viet CT, Dang D, Schmidt BL.

J Neurophysiol jn.00973.2014, 2015.

In order to determine whether IB4-positive trigeminal sensory neurons affect pain sensitivity, the authors administered 2 μ g of rIB4-SAP (Cat. #IT-10) to the right infraorbital foramen. Saporin (Cat. #PR-01) was used as a control.

Macrophages are needed in the progression of tuberculosis into lung cancer.

Li J, Pan Y, Zhang B, Chen Q.

Tumour Biol 2015.

Approximately 30% of lung carcinomas also have tuberculosis lesions. The authors investigated the potential link between inflammatory processes and cancer in the lung. Mice with established tuberculosis infections received weekly 20 μ g tail vein injections of Mac-1-SAP (Cat. #IT-06) in order to eliminate macrophages. Six months

later the mice receiving Mac-1-SAP had a significantly lower incidence of lung carcinoma than control animals.

Dual targeting NG2 and GD3A using Mab-Zap immunotoxin results in reduced glioma cell viability in vitro.

Higgins SC, Fillmore HL, Ashkan K, Butt AM, Pilkington GJ.

Anticancer Res 35(1):77-84, 2015.

Human glioma-derived cell lines were sequentially incubated with anti-NG2 and anti-GD3A coupled to Mab-ZAP (Cat. #IT-04) at 1 μ g/ml and 5 μ g/ml for 72 hours each. The combination therapy was significantly more effective than single therapy in eliminating the glioma cells.

Activation of the mouse primary visual cortex by medial prefrontal subregion stimulation is not mediated by cholinergic basalo-cortical projections.

Nguyen HN, Huppe-Gourgues F, Vaucher E.

Front Syst Neurosci 9:1, 2015.

Mice received 1 μ g icv injections of mu p75-SAP (Cat. #IT-16) to eliminate NGFr-positive cells. The results indicate a link between the prelimbic and infralimbic cortices and the primary visual cortex.

Preliminary results from a phase I study of substance P-saporin in terminal cancer patients with intractable pain.

Frankel AE, Nymeyer H, Lappi DA, Higgins D, Ahn C, Noe C.

J Clin Oncol 32 (suppl 31):191, 2014.

Existing pain therapies are insufficient to control cancer pain in 10-15% of patients. Substance P (SP) and its receptor, neurokinin-1 (NK-1r) have been determined to play a major role in spinal transmission of chronic pain. Animal studies have demonstrated that disruption of the NK-1r pathway alleviates chronic pain caused by a variety of stimuli. The authors are conducting a Phase I clinical trial in humans (NCT02036281) assessing the ability of SP-SAP to treat intractable chronic pain due to cancer. Patients have received intrathecal injections of 1, 2, or 4 μ g of SP-SAP with no evidence of toxicity or neurological or cardiac abnormalities. Doses will escalate up to 90 μ g.